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Economic Note

1985 incomes of US veterinarians

The American Veterinary Medical Association conducted an economic survey of US veterinarians in spring 1986. The purpose of the survey was to secure accurate data on veterinarians' earnings in private practice and in nonprivate practice employment. Findings from the survey, to be published in JAVMA in the coming months, should be useful because they provide information on veterinarians' incomes according to type of employment, geographic region, years of experience, and other important characteristics. In addition, valuable national data will be provided on economic returns to private veterinary practice, staff numbers and salaries, cash operating expenses, and other practice characteristics.

Survey method and sample size

The sample of veterinarians was selected randomly from AVMA's computerized records of 40,190 nonretired member and nonmember veterinarians. In the private practice sector, survey questionnaires were mailed to 1,000 veterinarians in each of six categories of private practice: large animal exclusive, large animal predominant, mixed animal (50% large, 50% small), small animal predominant, small animal exclusive, and equine. The large animal exclusive group included veterinarians engaged in bovine, porcine, and poultry practice, but not equine practice. Each group was sampled equally to ensure statistically reliable estimates for each type and to permit analysis within each group. The survey also included 668 veterinarians employed in private practice, but who were not classifiable according to the aforementioned six types of private practice.

In the nonprivate practice sector, questionnaires were mailed to 500 veterinarians in each of four nonpractice categories: college or university, federal government, state or local government, and industry or other employers. Surveys also were mailed to all 493 armed forces veterinarians listed in AVMA records as residing in the United States. The total survey sample consisted of 9,161 US veterinarians (Table 1).

An advance postcard was mailed to the entire sample on Mar 19, 1986, alerting veterinarians that they would soon receive the biennial economic survey. The questionnaire was mailed on Mar 24 and was followed by two mailings of reminder postcards. When the survey was terminated (June 15), 3,590 (39%) questionnaires had been returned to the AVMA. The sample of respondents was determined to be representative of the US veterinary medical population with respect to geographic, sex, and age distributions.

The survey questionnaire consisted of two sections. Section 1 was completed by all veterinarians in private and nonprivate practice and included questions on individuals' 1985 incomes, type of practice or employment, years of experience, age, sex, fringe benefits, hours and weeks worked, practice ownership status, and share of capital investment in practice real estate and

Table 1—1986 biennial economic survey sample

	No. of veterinarians in population	No. of veterinarians in sample	No. of respondents	Percentage response
Veterinarians in private practice				
Large animal exclusive	1,566	1,000	143	14
Large animal predominant	4,752	1,000	330	33
Mixed animal	3,257	1,000	333	33
Small animal predominant	4,537	1,000	393	39
Small animal exclusive	15,438	1,000	615	61
Equine	1,538	1,000	260	26
Other types	668	668	74	7
All practice types	31,756	6,668	2,148	32
Veterinarians not in private practice				
College or university	3,713	500	299	60
Federal government	1,344	500	277	55
State or local government	756	500	256	51
Armed forces	493	493	232	47
Industry and other	2,128	500	378	76
All employer types	8,434	2,493	1,442	58

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Table 2—Mean incomes of veterinarians in private practice, 1985

Type of practice	Mean income ($)	Median income ($)	No. of respondents
Large animal exclusive	43,481	34,750	110
Large animal predominant	47,490	39,250	276
Mixed animal	43,329	35,500	252
Small animal predominant	47,402	37,900	307
Small animal exclusive	49,098	36,250	454
Equine predominant	55,994	42,100	181
All practice types	48,056*	37,082*	1,600

*Weighted estimates based on total population of 31,756 veterinarians in private practice.

equipment. Section 2 was completed only by veterinarians who were private practice owners, ie, sole proprietors, partners, or shareholders in private veterinary practices. Information was provided on type of practice, facility and organizational form, assets and liabilities, market and community size, 1985 gross practice revenue, 1985 operating expenses, staff numbers and salaries, and caseload.

Income analysis

Veterinarians were requested to indicate their 1985 individual net income, before personal taxes, from professional veterinary medical activity, including income from practice, salary, profit sharing, and bonuses. If the respondent was the owner of a veterinary practice, owner's return from capital invested (ie, practice real estate) was included as income, even if leased by the owner to the practice.

Respondents reported individual net incomes at $3,000 increments ranging from "less than $16,000" to "$76,000 or more." Responses from veterinary practice owners were reviewed in detail to obtain valid estimates of net practice income. Specifically, reported individual net income was compared with computations made on the owner-respondent's practice income and expense data. For this analysis, individual private practice net income included return on capital invested, labor, and management.

Mean income was calculated by summing all income values and dividing by the number of respondents. Median income was calculated as the income level that divided the income distribution in half, ie, 50% of all veterinarians earning incomes below and 50% above this income level. Respondents were included in this analysis if they worked on the average at least 30 h/wk, and at least 48 weeks in their reported type of practice or employment in 1985.

Veterinarians in private practice

The 1985 mean individual net income, before personal taxes, of US veterinarians in private practice was $48,056 (Table 2). Mean income for specific types of private practice ranged from lows of $43,329 for mixed animal practitioners and $43,481 for large animal exclusive practitioners to a high of $55,994 for equine practitioners. Mean incomes for other practice types ranged downward as follows: small animal exclusive, $49,098; large animal predominant, $47,490; and small animal predominant, $47,402.

The 1985 median individual net income of US veterinarians in private practice was $37,730. The median incomes ranged from a low of $34,750 for large animal exclusive practice to a high of $42,100 for equine practice. In every type of practice, the median income was less than the mean income. This difference highlights the fact that a few very high incomes offset many lower incomes to yield a mean higher than the median.

A comparison of mean incomes for 1983 and 1985 showed that private practice income increased 3.9%, or +1.9%/yr.[1] With the exception of large animal exclusive practice, mean income increased in all practice categories over the 2-year period. Large animal exclusive mean income declined 6.1% from 1983 to 1985, whereas large animal predominant income increased 3.3%, mixed animal increased 6.8%, small animal predominant increased 7.8%, small animal exclusive increased 3.3%, and equine increased 4.6%.

A comparison to 1983 median incomes, however, showed that large animal exclusive practitioners' median income declined 9.8% from 1983 to 1985, about −4.9%/yr.[1] Large animal predominant practitioners' median income declined 4.9% over the same 2-year period, about −2.4%/yr. Mixed animal practitioners' median incomes remained stable from 1983 to 1985, whereas small animal predominant and small animal exclusive practitioners' median incomes declined 1.5% (−0.7%/yr) and 5.7% (−2.8%/yr), respectively. Equine practice median income increased 2.4%, or about +1.2%/yr, from 1983 to 1985. Overall, median private practice income decreased 4.3%, or −2.1%/yr.

For each type of private practice, percentages of veterinarians were determined for income classes ranging from less than $19,000 to more than $73,000 (Table 3). Each income class represented an income interval of $6,000. Comparisons of percentages of veterinarians in particular income classes indicated greater income variation in some types of practices than in others. For example, 22% of equine practitioners had incomes greater than $73,000, whereas only 6.4% of large animal practitioners had incomes greater than $73,000.

Veterinarians not in private practice

The 1985 mean income of US veterinarians not in private practice was $47,280 (Table 4). Mean incomes for specific types of nonprivate practice ranged

Table 3—Percentage distribution of veterinarians in private practice, by income classes, 1985

Income class ($)	Large animal exclusive	Large animal predominant	Mixed animal	Small animal predominant	Small animal exclusive	Equine predominant
Less than 19,000	9.1	6.9	10.7	7.5	4.1	5.5
19,000 to 24,999	11.8	12.7	15.3	13.0	15.2	7.7
25,000 to 30,999	12.7	15.6	13.4	15.6	16.9	14.9
31,000 to 36,999	19.1	9.8	10.3	9.8	13.2	11.6
37,000 to 42,999	9.1	7.6	8.4	10.1	8.7	8.3
43,000 to 48,999	5.5	6.9	5.7	9.1	7.4	7.2
49,000 to 54,999	5.5	11.6	9.2	5.9	6.3	11.0
55,000 to 60,999	10.0	5.4	7.6	5.2	4.1	3.3
61,000 to 66,999	5.5	2.5	4.2	5.9	4.3	3.3
67,000 to 72,999	5.5	4.7	3.4	3.3	2.6	4.4
More than 73,000	6.4	16.3	11.8	14.7	17.3	22.7
	100	100	100	100	100	100
	(110)*	(276)	(262)	(307)	(462)	(181)

*Number of usable responses in parentheses.

Table 4—Mean incomes of veterinarians not in private practice, 1985

Type of employer	Mean income ($)	Median income ($)	No. of respondents
College or university	43,604	40,990	239
Federal government	43,323	40,264	213
State or local government	40,549	37,857	211
Armed forces	41,688	38,200	194
Industry/commercial	62,547	57,357	146
Other/not-for-profit organization	53,529	51,833	71
All employer types	47,280*	44,152*	1,074

*Weighted estimates based on population of 8,434 veterinarians not in private practice.

from a low of $40,549 for state or local government to a high of $62,547 for industry. Mean incomes for other nonprivate practice types were $41,688 for armed forces, $43,323 for federal government, $43,604 for college or university, and $53,529 for other/not-for-profit organizations.

The 1985 median individual income of US veterinarians not in private practice was $44,152. The median incomes ranged from a low of $37,857 for state or local government to a high of $57,357 for industry. A comparison of the mean and median incomes indicated the difference between them was small, which suggests there were relatively few high incomes offsetting many lower incomes. Illustrating this is the fact that only in the industry and other/not-for-profit groups was there a large percentage (26.9% and 16.9%, respectively) that earned more than $73,000 (Table 5).

A comparison with 1983 incomes showed that mean nonprivate practice incomes increased 1.8% over the 2-year period.[1] Mean college or university income declined by 2% from 1983 to 1985, whereas all other employer groups showed gains in mean individual income over the 2-year period: federal government mean income increased 2.1%; state or local government increased 7.1%; armed forces gained 14.2%; industry/commercial gained 2.3%; and other/not-for-profit organization gained 12.4%.

Reliability of 1985 income estimates

Estimates of veterinarians' incomes derived from sample surveys are subject to sampling errors that arise because observations are made on only a portion of the total population. To make statistical inferences about true population mean incomes, it is useful to determine confidence intervals.

A confidence interval is a

Table 5—Percentage distribution of veterinarians not in private practice, by income classes, 1985

Income class ($)	College or university	Federal government	State or local government	Armed forces	Industry/ commercial	Other/ not-for-profit
Less than 19,000	15.1	0.5	0.9	0.5	1.4	5.6
19,000 to 24,999	5.3	5.2	2.4	2.6	2.8	7.0
25,000 to 30,999	4.6	9.4	10.9	18.0	2.8	11.3
31,000 to 36,999	7.5	14.1	24.2	19.6	4.1	4.2
37,000 to 42,999	17.2	27.7	28.4	16.5	9.0	7.0
43,000 to 48,999	13.0	13.1	13.7	15.5	11.7	5.6
49,000 to 54,999	11.7	14.6	9.5	11.9	11.0	14.1
55,000 to 60,999	5.9	5.6	6.2	9.3	12.4	5.9
61,000 to 66,999	9.6	6.1	1.9	3.6	12.4	9.9
67,000 to 72,999	3.8	2.8	0.5	2.1	5.5	8.5
More than 73,000	5.9	0.9	1.4	0.5	26.9	16.9
	100	100	100	100	100	100
	(239)*	(213)	(211)	(194)	(145)	(71)

*Number of usable responses in parentheses.

Table 6—Mean income confidence intervals for US veterinarians, 1985

	Estimated mean income ($)	Standard error of estimated mean income ($)	95% confidence interval of true mean income ($)*
Veterinarians in private practice			
Large animal exclusive	43,481	2,284	$39,004 \leq \mu \leq 47,957$
Large animal predominant	47,490	1,653	$44,250 \leq \mu \leq 50,729$
Mixed animal	43,329	1,611	$40,171 \leq \mu \leq 46,486$
Small animal predominant	47,402	1,790	$43,893 \leq \mu \leq 50,910$
Small animal exclusive	49,098	1,597	$45,967 \leq \mu \leq 52,228$
Equine predominant	55,994	3,102	$49,914 \leq \mu \leq 62,073$
All practice types	48,056	792	$46,504 \leq \mu \leq 49,608$
Veterinarians not in private practice			
College or university	43,604	1,228	$40,116 \leq \mu \leq 44,929$
Federal government	43,323	829	$41,698 \leq \mu \leq 44,947$
State or local government	40,549	721	$39,135 \leq \mu \leq 41,962$
Armed forces	41,688	873	$39,976 \leq \mu \leq 43,399$
Industry/commercial	62,547	2,097	$58,436 \leq \mu \leq 66,657$
Other/not-for-profit organization	53,529	3,173	$47,310 \leq \mu \leq 59,748$
All employer types	47,280	566	$46,171 \leq \mu \leq 48,389$

*Form of confidence interval is $(\bar{x} - t\sigma_{\bar{x}} \leq \mu \leq (\bar{x} + t\sigma_{\bar{x}})$ where $\bar{x}$ is mean income, t is 1.96, $\sigma_{\bar{x}}$ is SE of the mean income, and μ is the true mean income.

range of values that has a predetermined probability of including the true population mean income. For example, it may be stated that there is a 95% probability that the estimated mean income plus or minus 2 standard errors will encompass the true, but unknown, population mean income.

Confidence intervals of the true mean incomes in 1985 for all private and nonprivate practice types were determined (Table 6). For all private practitioners, one can be 95% confident that the interval $46,504 to $49,608 will encompass the true 1985 average income. Because of the smaller sample sizes in each of the six private practice types and six nonprivate practice types, 95% confidence intervals for these groups are greater, ranging from $3,000 to $12,000.

Since a mean income estimate is influenced by extreme values at the high end of an income distribution, the median estimate often is considered a more meaningful estimate of the central income level of a population.

1. Wise JK. 1983 incomes of US veterinarians. *J Am Vet Med Assoc* 1985; 186:395–397.